

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application. Claims 6, 7, and 9 are currently under consideration. Claims 3 and 8 have been withdrawn from consideration. The Examiner is respectfully requested to reconsider his rejections in view of the remarks as set forth below.

Entry of the Response

Although the present application is under final rejection, since the present response includes only arguments, entry of the response and full consideration of the arguments are considered proper.

Rejection Under 35 U.S.C. § 103

Claim 9 stands rejected under 35 U.S.C. § 103 as being obvious over Ishikawa et al. (U.S. Patent No. 5,915,467) in view of Schuez et al. (U.S. Patent No. 5,775,411). This rejection is respectfully traversed.

The Examiner states that Ishikawa et al. discloses all of the claimed limitations except secondary grooves on the projected portions. Applicants disagree with this understanding of the primary reference. Applicants submit that Ishikawa et al. does not show the combination of elements described in claim 9. It does not

show, not only the secondary grooves, but also it does not show the regions of V shaped patterns of each set of corresponding grooves forming individual V shapes by their intersection. The Examiner argues that the region W3 can be read as a portion of rows W1 and W2 and that extensions or imaginary lines of the grooves in the two rows intersect to form V shaped patterns.

Ishikawa et al. does not show this feature. The Examiner's suggestion that imaginary lines can be extended from the existing patterns does not produce a device as defined by claim 9. The recitation of the regions of V shaped patterns describes an actual physical part of the invention which is important since the pipe is designed to transfer heat. The patterns on the insides of the walls relate to the flow of the fluid within the pipe and how the heat is transferred due to this flow. Merely extending imaginary lines from the parallel grooves does not produce this effect. This limitation is not merely to describe the location of the grooves, but rather describes the actual intersections which produce actual results in regard to fluid flow and heat transfer. Thus, Applicants disagree that the Ishikawa et al. reference teaches this feature.

The Examiner cites Schuez et al. to show a heat transfer pipe with a plurality of grooves 3 and projection portions 2 with a plurality of secondary grooves 5. Applicants disagree that Schuez et al. shows the secondary grooves as described in claim 9. The

Examiner states that the grooves 5 have a small width compared to the height of the projected portions. While the grooves appear to have a width which is roughly 1/3 of that of the height, this is much different than the fine line shown in the present invention which are considerably smaller than this. Also, the description of the secondary grooves in claim 9 describes that they extend from one side to the other side surface thereof. The Schuez et al. reference only shows that the indentations are on opposite sides of the projected portion. It did not extend over the top and accordingly, they do not extend from one side surface to the other side surface.

Applicants submit that even if the Ishikawa et al. and Schuez et al. references were taken together, they still do not show the combination of elements described in claim 9. In particular, they do not show the three features discussed above. Applicants submit that these features are also not obvious. In view of this, Applicants submit that claim 9 is not obvious over this combination of references.

Claims 6, 7, and 9 stand rejected under 35 U.S.C. § 103 as being obvious over Sasaki et al. (JP 10-300379) in view of Schuez et al. This rejection is respectfully traversed.

The Examiner makes the same comment about Sasaki et al. as he did about the Ishikawa et al. reference discussed above, namely that it shows all of the claimed limitations except the secondary

grooves. Applicants submit that the Sasaki et al. reference shows no more than Ishikawa et al. discussed above. That is, Sasaki et al. also does not show the regions of V shaped patterns which are included in each of the three claims.

The Examiner comments that region 14 can be read as a portion of one of the two rows and that extensions or imaginary lines of the plurality of grooves intersect in region 14 to form V shaped patterns. As pointed out above, the limitation is positively claimed as a physical element and not merely as extensions of other groove lines. The presence of these V shaped patterns affects the flow of the fluid in the pipe and the heat transfer. Accordingly, merely having imaginary line extensions does not provide the same effect as having the regions themselves. Accordingly, Applicants submit that this reference does not teach the features suggested by the Examiner.

The Examiner relies on Schuez et al. to show the second grooves in the same manner as discussed above. However, in the same manner as discussed above, Applicants submit that the secondary grooves do not have a small width compared to the radial direction and do not extend from one side surface to the other side surface. Thus, Applicants submit that Schuez et al. does not show the features of the secondary grooves in the manner claimed even if combined with Sasaki et al. For these reasons, Applicants submit

that claims 6, 7, and 9 are not obvious over this combination of references.

No Prosecution History Estoppel

Claims 6, 7, and 9 are hereby presented in independent form. No prosecution history estoppel would apply to the interpretation of the limitations set forth in these claims, in view of the fact that the subject matter has been continuously presented since the original filing date of the present application.

Conclusion

In view of the above remarks, it is believed that the claims clearly distinguish over the patents relied on by the Examiner, either alone or in combination. In view of this, reconsideration of the rejections and allowance of all the claims are respectfully requested.

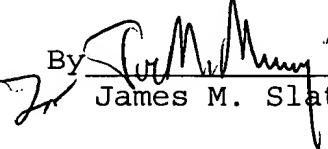
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert F. Gnuse (Reg. No. 27,295) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any


overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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0020-4783P

Attachment(s)

(Rev. 11/22/04)